an optical pumping light source for supplying predetermined optical pumping light to said optical amplification section;

an optical filter capable of changing a gradient $dL/d\lambda$ of a loss L (dB) with respect to a wavelength λ (nm) in the predetermined wavelength band; and

control means for controlling an optical pumping light output from said optical pumping light source such that light power after amplification has a predetermined target value, and for adjusting the gradient $dL/d\lambda$ of said optical filter.

14. An optical amplification method of amplifying, at once, multiplexed signal light belonging to a predetermined wavelength band, in which a plurality of signal light components having different wavelengths are multiplexed, comprising the steps of:

guiding the multiplexed signal light to an optical waveguide doped with a fluorescent material together with predetermined optical pumping light and optically amplifying the multiplexed signal light;

guiding at least one of the multiplexed signal light before amplification and that after amplification to an optical filter capable of changing a gradient $dL/d\lambda$ of a loss L (dB) with respect to a wavelength λ (nm) in the predetermined wavelength band and adjusting the gradient $dL/d\lambda$ of the optical filter to reduce a inherent wavelength-dependent gradient in the optical amplification; and

adjusting an intensity of the optical pumping light to adjust light power after amplification to a predetermined target value.

Please add new claims 28-31 as follows:

28. An amplifier according to claim 1, wherein said predetermined wavelength band has band-width not less than 20 nm.

29. An optical amplifier for amplifying, at once, multiplexed signal light belonging to a predetermined wavelength band, in which a plurality of signal light components having different wavelengths are multiplexed, comprising:

one or a plurality of optical amplification sections each of which has an optical waveguide doped with a fluorescent material and amplifies the multiplexed signal light by optical pumping of the fluorescent material;

an optical pumping light source for supplying predetermined optical pumping light to said optical amplification section;

an optical filter capable of changing a gradient $dL/d\lambda$ of a loss L (dB) with respect to a wavelength λ (nm) in the predetermined wavelength band;

control means for controlling an optical pumping light output from said optical pumping light source such that light power after amplification has a predetermined target value, and for adjusting the gradient $dL/d\lambda$ of said optical filter; and

a gain equalizer for compensating for an inherent wavelength-dependent gain of said optical amplification section.

30. A method according to claim 14, wherein said predetermined wavelength band has band-width not less than 20 nm.

31. An optical amplification method of amplifying, at once, multiplexed signal light belonging to a predetermined wavelength band, in which a plurality of signal light components having different wavelengths are multiplexed, comprising the steps of:

guiding the multiplexed signal light to an optical waveguide doped with a fluorescent material together with predetermined optical pumping light and optically amplifying the multiplexed signal light;

guiding at least one of the multiplexed signal light before amplification and that after amplification to an optical filter capable of changing a gradient $dL/d\lambda$ of a loss L (dB) with respect to a wavelength λ (nm) in the predetermined wavelength band and adjusting the gradient $dL/d\lambda$ of the optical filter to reduce an inherent wavelength-dependent gradient in the optical amplification;

reducing an inherent wavelength-dependent gain in the optical amplification using a predetermined gain equalizer; and

adjusting an intensity of the optical pumping light to adjust light power after amplification to a predetermined target value.

REMARKS

Claims 1 through 31 are now pending. In response to the Office Action, dated April 23, 2002, claims 1 and 14 have been amended and new claims 28 through 31 have been added. Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE." Care has been taken to avoid the